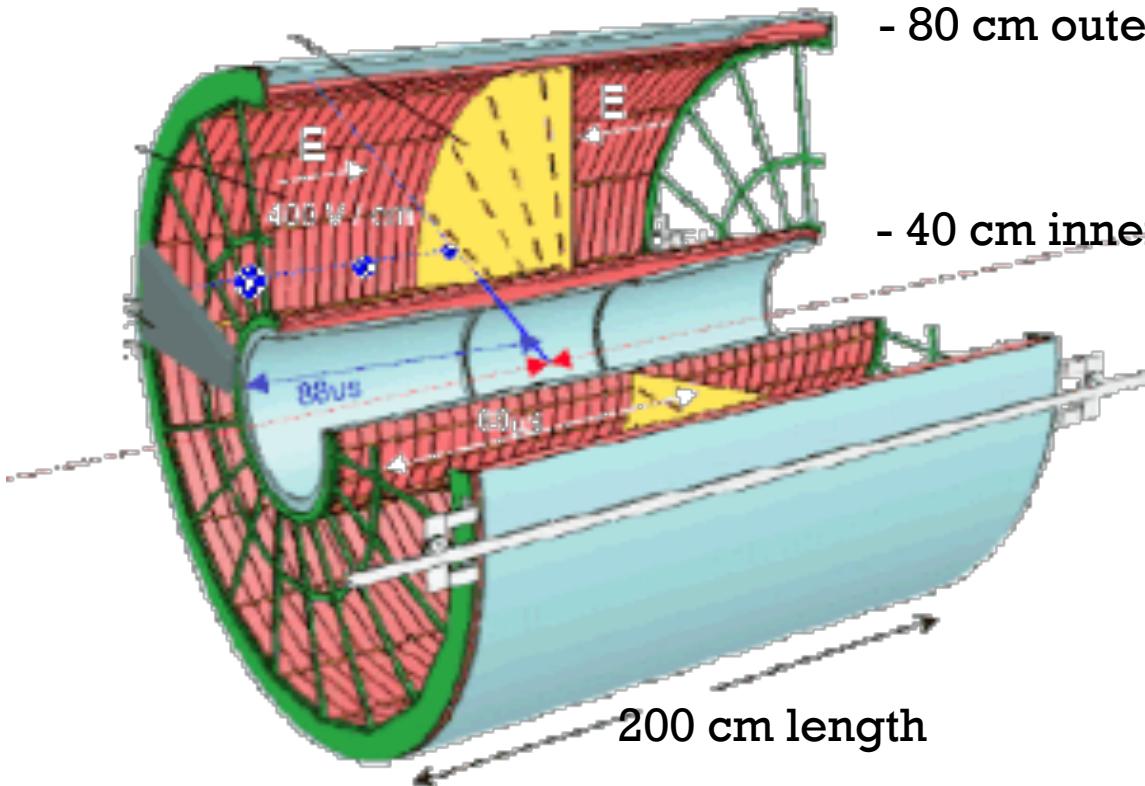


sPHENIX TPC Default Configuration

- R_{outer} , B_{field} , length, fixed by BaBar Magnet



- 80 cm outer radius

- 40 cm inner radius

$B = 1.45 \text{ Tesla}$
 $E = 200 \text{ V/cm}$
T2K gas (95-3-2)
3-Gem/MicroMega
SAMPA Chip Readout
 $r\text{-pitch} = 8 \text{ mm}$
 $\phi\text{-pitch} = 1.2 \text{ mm}$
 $t\text{-bucket} = 40 \text{ ns}$

TPC Simulation Goal

- Optimize Design & Evaluate Cost by Sep. 1
- Criteria for Optimization
 - Single-track $\Delta p/p$
 - Single-track Upsilon Mass Width
 - Single-track π/K separation with $\Delta E/dx$
 - Two-track resolution (Hijing)
 - Upsilon signal-noise (Hijing)

Parameter Studies

- Parameters to vary
 - inner radius, in 5-cm increments
 - radial and azimuthal pitch
 - gas (T2K, P10, Ne-CO₂, CF₄)
 - E-field and time-resolution
- Results → Technical Note
 - Optimize design
 - Estimate Cost
 - Guide hardware R&D (ion backflow gases, etc.)

Goals for next meeting

- No Meeting July 14 (DOE Quad. Reviews)
- Next Meeting July 28
- Volunteers to
 - vary inner radius
 - vary pitch
 - study 2-track and Upsilon in Hijing